The State of Michigan Transportation

ASSET MANAGEMENT COUNCIL

2003-2014 PASER Road Survey

For Van Buren County, Michigan

SWMPC
SOUTHWEST MICHIGAN
PLANNING
COMMISSION

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PROJECT OVERVIEW

Since 2003, the Southwest Michigan Planning Commission (SWMPC) and representatives of each of the three counties (Berrien, Cass, and Van Buren) in the Southwest Region and the Michigan Department of Transportation (MDOT) have jointly conducted annual assessments of the condition of the Southwest Region's federal aid eligible roads. These assessments have utilized the Pavement Surface Evaluation and Rating (PASER) system in establishing road conditions. The effort has been funded and administered through the State of Michigan Transportation Asset Management Council and has satisfied the Governmental Accounting Standards Board Statement 34 (GASB 34), requiring tri-annual road assessments for governmental units receiving federal aid, doing so with minimal staff over short time periods. SWMPC hopes to use the data gathered here to assist member agencies in developing plans for the effective management of their pavement networks.

METHODOLOGY: THE PASER ROAD RATING SYSTEM

PASER, or Pavement Surface Evaluation and Rating, is a visual test of the surface condition of the road that utilizes a ten-point scale, focusing on pavement conditions; structural or geometric defects are not considered in determining the ratings. Ratings are applied to road segments of varying length, with segment values ranging from 10 for a new road segment to 1 for a completely failed segment, and specific ratings determined by the number and type of surface defects. The ratings are compiled by teams of three to four individuals who drive the roads and conduct windshield surveys. PASER rating charts for asphalt, concrete, and gravel roads have been included in the appendix of this report.

PASER Rating	Pavement Quality
10	Excellent
9	
8	
7	
6	
5	
4	
3	
2	
1	Poor

The State of Michigan Asset Management Council has requested that the information gathered in this survey be reported using the following categories:

- **Roads with PASER ratings of 8-10 require Routine Maintenance**. Routine maintenance encompasses day-to-day maintenance activities, such as street sweeping, drainage clearing, shoulder gravel grading, and sealing cracks to prevent standing water and water penetration.

- **Roads with PASER ratings of 5-7 require Capital Preventive Maintenance**. Capital preventive maintenance is a planned set of cost effective treatments to an existing roadway system that retard future deterioration and maintain or improve the functional condition of the system without significantly increasing structural capacity. The purpose of capital preventive maintenance fixes is to protect the

pavement structure, slow the rate of pavement deterioration, and/or correct pavement surface deficiencies. These treatments are targeted at pavement surface defects primarily caused by the environment and by pavement material deficiencies.

- **Roads with PASER ratings of 1-4 require Structural Improvements**. This category includes work identified as rehabilitation and reconstruction, addressing the structural integrity of a road.

Computer Equipment and Software

Teams collected data using a laptop computer with the RoadSoft GIS Laptop Data Collector software loaded. A Garmin GPS 35 PC TracPak Global Position System unit was connected to the laptop to track position and locate road segments. RoadSoft GIS is an asset management software package created and distributed free of charge by the Michigan Technology Institute's Technology Development Group. The current version of the program was designed with a special module to collect PASER rating data.

Staff Time

For the purposes of this project, a team of three to four members was used for collecting PASER data. Each team member played a separate role within the vehicle during the data collection. One individual drove and collaborated in the road rating, a second navigated and also collaborated in the road ratings, and a third entered the rating information into the laptop computer; when the team rated roads within a city or village, a fourth member would be added from that city or village. The team was comprised of one SWMPC representative, one representative from a county road commission (depending upon which county the team was in at the time), and one MDOT representative from the Coloma Transportation Service Center (TSC). Several cities and villages also participated in the project. In addition, one other SWMPC team member handled the processing and uploading of the data to TAMC.

Training

All participants in the survey were required to attend a daylong training session that took place at the Kalamazoo Area Transportation Study offices. Participants received an overview of the project and were given instruction on how to use the RoadSoft software and the PASER road rating system for data collection. Once out in the field, experienced staff members taught new participants how to use the RoadSoft program and guided them through the rating process.

County-Wide Results

As shown in Figure 1 and Table 1 below, the surface condition of **federal aid eligible** roads in Van Buren County has generally worsened from 2003 through 2014. The percentage of assessed road segments receiving a Good rating of 8-10 has decreased from a high of 32.9% in 2004 to a low of 7.5% in 2008. Likewise, the percentage of road segments rated Poor (1-4) grew from a low of 1.3% in 2003 to a high of 58.9% in 2011.

Figure 1: *Percentage of road segments falling under surface condition classifications, by year*
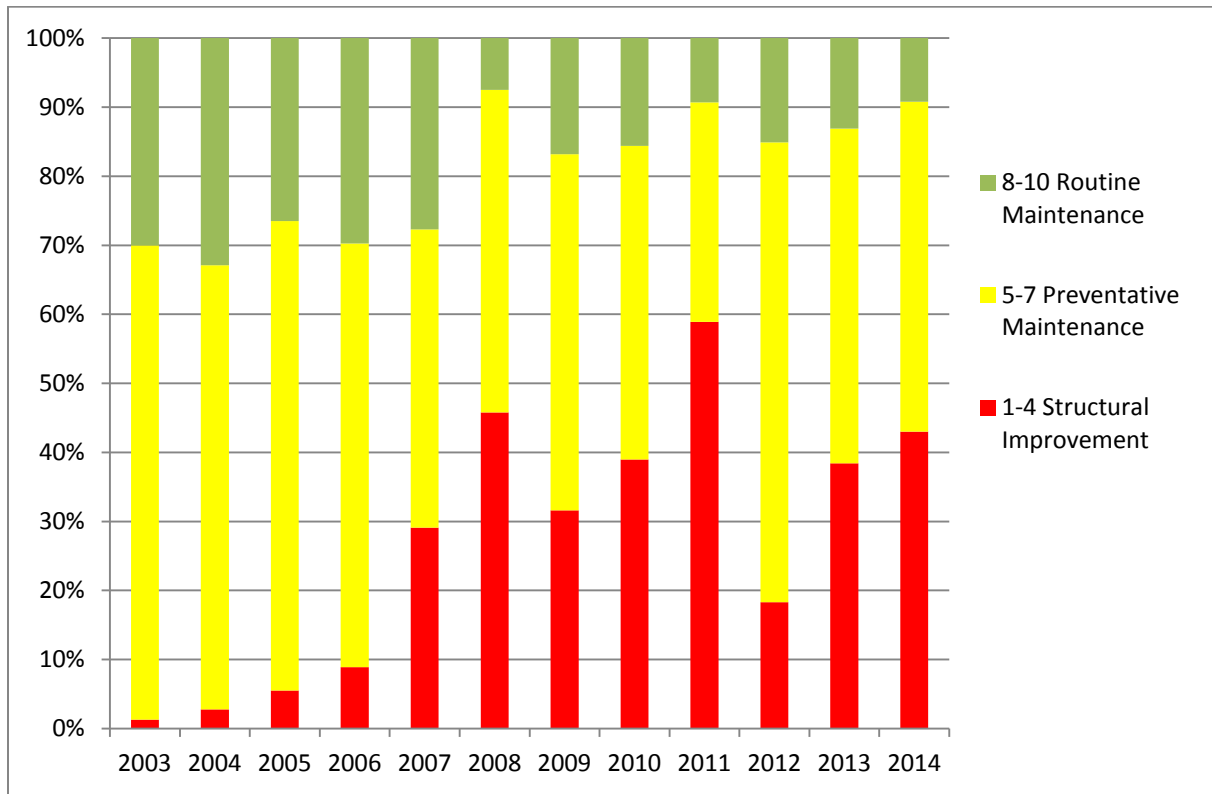
Table 1: *Road segment classifications and total road-miles rated, by year*

Year	1 to 4 Structural Improvements	5 to 7 Capital Preventive Maintenance	8 to 10 Routine Maintenance	Total	Total Miles Rated
2003	1.3%	68.7%	30.0%	100%	511.0
2004	2.8%	64.3%	32.9%	100%	481.2
2005	5.5%	68.1%	26.5%	100%	546.5
2006	8.9%	61.3%	29.7%	100%	563.8
2007	29.1%	43.2%	27.7%	100%	569.3
2008	45.8%	46.7%	7.5%	100%	469.5
2009	31.6%	51.6%	16.8%	100%	274.3
2010	39.0%	45.4%	15.6%	100%	306.7
2011	58.9%	31.8%	9.3%	100%	227.7
2012	18.3%	66.6%	15.1%	100%	241.1
2013	38.4%	48.5%	13.1%	100%	373.4
2014	43.0%	47.8%	9.2%	100%	241.1

	1 to 4 Structural Improvements	5 to 7 Capital Preventive Maintenance	8 to 10 Routine Maintenance	Total	Total Miles Rated
2003-2004 Totals	2.0%	66.6%	31.4%	100%	992.2
2013-2014 Totals	40.1 %	48.2%	11.7%	100%	614.5
Change from 03-04 to 13-14	38.1%	-11.0%	-17.5%	--	-377.7

While surface conditions show a clear downward trend, it is important to exercise care in making specific comparisons between years. Between 2003 and 2007, efforts were made to rate the entire network of federal aid eligible roads in Van Buren County. Beginning in 2008, however, the road network was split approximately in half, with alternating halves being assessed on consecutive years. In 2013, the Van Buren County Road Commission aimed to rate all of the roads in the County, and therefore, the number of federal-aid eligible miles rated in 2013 was substantially higher than in previous years. Thus, ratings changes between consecutive years primarily represent surface condition ratings of entirely different road segments, as opposed to changes in condition of the same segments. To account for this change, Table 1 contains a row demonstrating the change in average conditions over 2003-2004 to the average conditions over 2013-2014. Still, the results display a clear trend toward decreasing surface ratings.

It is worth noting, however, that the percentage of roads in poor condition was lower in 2013 than in 2011, indicating improvement along the same segments of roadway.

Road Ratings by Jurisdiction

In addition to the aggregate county-wide conditions displayed above, Table 2 (starting on page 8, also available in Excel format at http://swmpc.org/asset_mgmt_b.asp) displays yearly rating data by local jurisdiction. The portion of the table displayed on page 14 of this document provides a detailed list of how road conditions have changed at the jurisdictional level over the past eleven years. Of the 29 cities, villages, and townships in Van Buren County with federal aid eligible roads, only 3 have seen a reduction over this time in the percentage of its federal aid eligible roads in poor condition, while only 6 have seen increases in the percentage of roads in good condition. Deterioration of the pavement network seems to be the overarching trend.

In addition, 21 jurisdictions have seen a decrease in the percentage of their roads in fair condition. This decrease is directly related to the increase in the number of road miles in poor condition throughout Van Buren County. The reason for an increase in roads in poor condition is likely a lack of timely preventative maintenance treatments to roads that were previously maintained in fair condition, even for those jurisdictions where the percentage of roads in good condition has increased. Communities may be spending most of their road funds on reconstruction of segments that are in poor condition, which automatically moves these roads to good condition. However, the reconstruction is likely not able to keep pace with the deterioration of roads from fair to poor condition.

Part of SWMPC's aim in compiling the PASER ratings and publishing an annual report is to promote planning that emphasizes structural improvements, preventative maintenance, and routine maintenance as a coordinated strategy for achieving and sustaining high-quality infrastructure.

Table 2: Percentage of Federal Aid Eligible Roads in Each PASER Category by Jurisdiction

Van Buren County Jurisdictions	2 0 0 3				2 0 0 4			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	0.0%	54.2%	45.8%	24.6	0.0%	12.9%	87.1%	21.3
Antwerp Twp	0.0%	71.9%	28.1%	32.5	0.0%	65.6%	34.4%	34.5
Arlington Twp	0.0%	39.1%	60.9%	21.4	0.0%	41.5%	58.5%	23.5
Bangor	3.6%	78.0%	18.4%	3.5	0.0%	72.3%	27.7%	1.8
Bangor Twp	5.3%	94.7%	0.0%	18.7	10.9%	71.1%	17.9%	18.1
Bloomingdale	0.0%	66.8%	33.2%	2.3	0.0%	100.0%	0.0%	0.6
Bloomingdale Twp	0.0%	82.5%	17.5%	19.1	0.0%	70.9%	29.1%	10.0
Breedsville	6.2%	93.8%	0.0%	1.8	N/A	N/A	N/A	0.0
Columbia Twp	0.0%	69.4%	30.6%	22.0	0.0%	20.3%	79.7%	10.7
Covert Twp	0.0%	97.4%	2.6%	38.7	2.6%	89.7%	7.7%	38.7
Decatur	0.0%	81.2%	18.8%	1.6	0.0%	73.8%	26.2%	1.6
Decatur Twp	0.0%	81.5%	18.5%	13.2	16.9%	73.4%	9.7%	19.4
Geneva Twp	0.0%	57.5%	42.5%	24.8	0.0%	73.9%	26.1%	11.1
Gobles	11.1%	72.5%	16.4%	2.2	0.0%	24.2%	75.8%	2.2
Hamilton Twp	0.0%	77.4%	22.6%	26.5	0.0%	75.6%	24.4%	26.5
Hartford	0.0%	91.2%	8.8%	2.5	0.0%	100.0%	0.0%	2.5
Hartford Twp	0.1%	46.3%	53.6%	28.8	0.0%	55.0%	45.0%	28.8
Keeler Twp	0.0%	73.2%	26.8%	24.5	0.0%	70.1%	29.9%	24.5
Lawrence	47.3%	51.9%	0.8%	3.3	25.0%	46.9%	28.1%	3.3
Lawrence Twp	0.0%	46.6%	53.4%	36.6	0.0%	58.5%	41.5%	37.4
Lawton	7.1%	92.9%	0.0%	2.7	21.8%	64.1%	14.0%	2.7
Mattawan	0.0%	43.8%	56.2%	3.8	14.7%	65.4%	19.9%	3.8
Paw Paw	10.4%	76.7%	13.0%	2.8	0.0%	73.8%	26.2%	2.8
Paw Paw Twp	1.3%	53.0%	45.8%	40.0	1.3%	63.6%	35.0%	40.1
Pine Grove Twp	0.0%	61.7%	38.3%	21.0	0.0%	37.6%	62.4%	21.0
Porter Twp	0.0%	88.6%	11.4%	25.7	5.6%	90.6%	3.8%	26.7
South Haven	5.3%	91.2%	3.5%	19.7	14.7%	79.7%	5.7%	20.2
South Haven Twp	4.7%	84.2%	11.2%	34.1	0.2%	87.2%	12.5%	34.6
Waverly Twp	0.0%	22.6%	77.4%	12.7	0.0%	17.7%	82.3%	12.9

Van Buren County Jurisdictions	2005				2006			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	0.0%	38.2%	61.8%	23.8	0.6%	69.8%	29.6%	27.7
Antwerp Twp	1.4%	69.8%	28.8%	38.4	0.0%	72.0%	28.0%	38.7
Arlington Twp	4.2%	92.4%	3.5%	23.5	10.1%	78.8%	11.1%	23.5
Bangor	7.6%	67.0%	25.4%	3.7	0.0%	65.3%	34.7%	3.7
Bangor Twp	17.7%	58.2%	24.1%	19.7	9.3%	82.6%	8.0%	21.1
Bloomingdale	0.0%	100.0%	0.0%	2.3	0.0%	94.4%	5.6%	2.3
Bloomingdale Twp	0.0%	88.9%	11.1%	23.6	0.0%	71.3%	28.7%	23.6
Breedsville	N/A	N/A	N/A	1.8	N/A	N/A	N/A	1.8
Columbia Twp	10.4%	70.2%	19.5%	28.0	0.0%	75.2%	24.8%	28.3
Covert Twp	9.5%	64.5%	26.1%	40.1	19.9%	30.1%	50.0%	40.1
Decatur	0.0%	64.0%	36.0%	1.6	8.3%	59.2%	32.5%	1.6
Decatur Twp	5.2%	53.2%	41.7%	19.4	29.3%	59.9%	10.8%	19.4
Geneva Twp	0.0%	71.0%	29.0%	30.0	3.6%	52.2%	44.2%	30.0
Gobles	0.0%	100.0%	0.0%	2.2	0.0%	91.2%	8.8%	2.2
Hamilton Twp	0.0%	70.1%	29.9%	26.5	3.4%	57.2%	39.4%	26.5
Hartford	0.0%	100.0%	0.0%	2.5	0.0%	79.9%	20.1%	2.5
Hartford Twp	0.0%	45.1%	54.9%	28.8	0.0%	43.1%	56.9%	28.7
Keeler Twp	0.0%	62.5%	37.5%	24.5	0.0%	67.3%	32.7%	24.6
Lawrence	25.0%	46.9%	28.1%	3.3	33.9%	55.1%	11.0%	3.3
Lawrence Twp	0.0%	54.0%	46.0%	37.3	10.2%	53.9%	35.9%	37.3
Lawton	0.0%	78.2%	21.8%	2.7	0.0%	74.6%	25.4%	3.4
Mattawan	15.9%	59.5%	24.6%	3.8	8.2%	88.8%	3.0%	6.7
Paw Paw	0.0%	79.6%	20.4%	2.8	0.0%	74.9%	25.1%	3.6
Paw Paw Twp	6.9%	63.9%	29.2%	40.1	6.3%	49.1%	44.6%	42.6
Pine Grove Twp	1.8%	91.0%	7.2%	21.0	4.0%	96.0%	0.0%	21.0
Porter Twp	10.5%	75.1%	14.4%	26.7	18.2%	31.2%	50.5%	26.7
South Haven	26.8%	61.8%	11.4%	20.4	34.4%	49.6%	16.0%	20.6
South Haven Twp	10.2%	84.3%	5.5%	35.1	24.2%	59.3%	16.5%	37.3
Waverly Twp	0.0%	84.2%	15.8%	12.9	0.0%	100.0%	0.0%	15.0

Van Buren County Jurisdictions	2007				2008			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	35.3%	43.8%	20.9%	29.4	53.9%	46.1%	0.0%	29.4
Antwerp Twp	20.8%	45.0%	34.2%	40.2	59.9%	31.6%	8.5%	20.8
Arlington Twp	26.5%	44.9%	28.5%	23.4	61.5%	38.5%	0.0%	23.6
Bangor	18.1%	31.5%	50.3%	3.7	32.1%	67.9%	0.0%	3.7
Bangor Twp	33.1%	33.8%	33.1%	20.9	34.4%	58.6%	7.1%	21.1
Bloomingdale	0.0%	55.4%	44.6%	2.3	0.0%	100.0%	0.0%	2.3
Bloomingdale Twp	26.8%	55.8%	17.4%	23.6	50.7%	48.8%	0.5%	23.6
Breedsville	N/A	N/A	N/A	1.8	N/A	N/A	N/A	1.8
Columbia Twp	50.7%	25.6%	23.8%	28.2	68.4%	31.6%	0.0%	28.3
Covert Twp	29.7%	40.0%	30.4%	40.1	22.5%	59.5%	18.0%	40.1
Decatur	4.7%	70.8%	24.5%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	58.5%	32.5%	9.0%	19.4	95.5%	4.5%	0.0%	14.6
Geneva Twp	28.5%	43.5%	28.1%	29.0	30.1%	65.5%	4.5%	30.0
Gobles	9.6%	90.4%	0.0%	2.2	27.6%	33.0%	39.5%	2.2
Hamilton Twp	33.7%	62.7%	3.6%	27.0	35.7%	60.0%	4.3%	19.6
Hartford	47.7%	34.0%	18.3%	2.5	44.2%	55.8%	0.0%	2.3
Hartford Twp	23.7%	36.1%	40.2%	31.3	37.8%	56.8%	5.4%	18.4
Keeler Twp	30.7%	45.8%	23.5%	24.6	36.0%	48.9%	15.2%	21.7
Lawrence	62.7%	26.3%	11.0%	3.3	66.7%	28.3%	5.0%	3.3
Lawrence Twp	25.8%	37.2%	37.0%	39.3	62.8%	36.3%	0.9%	26.3
Lawton	37.5%	33.5%	28.9%	3.4	100.0%	0.0%	0.0%	0.9
Mattawan	18.1%	78.5%	3.4%	5.9	59.6%	40.4%	0.0%	2.4
Paw Paw	26.2%	33.0%	40.9%	3.6	N/A	N/A	N/A	0.0
Paw Paw Twp	9.9%	49.4%	40.7%	42.6	37.0%	51.1%	11.9%	19.2
Pine Grove Twp	24.6%	59.0%	16.4%	21.0	65.0%	34.4%	0.6%	21.0
Porter Twp	17.2%	43.9%	39.0%	26.7	63.3%	36.7%	0.0%	20.1
South Haven	45.2%	33.0%	21.8%	20.6	37.2%	45.4%	17.3%	20.6
South Haven Twp	25.2%	40.3%	34.4%	37.0	19.5%	50.8%	29.7%	37.3
Waverly Twp	38.5%	46.1%	15.4%	15.0	39.2%	60.8%	0.0%	15.0

Van Buren County Jurisdictions	2 0 0 9				2 0 1 0			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	N/A	N/A	N/A	0.0	44.2%	55.8%	0.0%	29.3
Antwerp Twp	30.7%	45.0%	24.2%	41.1	N/A	N/A	N/A	0.0
Arlington Twp	N/A	N/A	N/A	0.0	46.6%	24.2%	29.2%	23.6
Bangor	N/A	N/A	N/A	0.0	28.6%	71.4%	0.0%	3.7
Bangor Twp	N/A	N/A	N/A	0.0	40.0%	42.3%	17.7%	21.1
Bloomingdale	N/A	N/A	N/A	0.0	0.0%	100.0%	0.0%	2.3
Bloomingdale Twp	N/A	N/A	N/A	0.0	49.5%	32.1%	18.4%	23.6
Breedsville	N/A	N/A	N/A	0.0	100.0%	0.0%	0.0%	1.8
Columbia Twp	N/A	N/A	N/A	0.0	57.4%	39.9%	2.6%	28.2
Covert Twp	N/A	N/A	N/A	0.0	19.2%	62.8%	18.0%	40.1
Decatur	52.1%	35.7%	12.2%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	58.5%	41.5%	0.0%	20.8	N/A	N/A	N/A	0.0
Geneva Twp	N/A	N/A	N/A	0.0	40.7%	59.3%	0.0%	29.9
Gobles	N/A	N/A	N/A	0.0	41.0%	19.5%	39.5%	2.2
Hamilton Twp	46.0%	54.0%	0.0%	27.0	N/A	N/A	N/A	0.0
Hartford	68.2%	29.3%	2.5%	2.5	N/A	N/A	N/A	0.0
Hartford Twp	14.9%	57.2%	27.9%	31.3	100.0%	0.0%	0.0%	2.7
Keeler Twp	19.3%	80.7%	0.0%	24.6	100.0%	0.0%	0.0%	3.3
Lawrence	38.2%	45.9%	15.9%	3.3	N/A	N/A	N/A	0.0
Lawrence Twp	27.7%	41.7%	30.6%	39.3	N/A	N/A	N/A	0.0
Lawton	62.3%	19.0%	18.7%	3.1	0.0%	0.0%	100.0%	0.3
Mattawan	16.5%	83.5%	0.0%	6.8	N/A	N/A	N/A	0.0
Paw Paw	66.0%	29.1%	5.0%	3.6	N/A	N/A	N/A	0.0
Paw Paw Twp	19.7%	47.9%	32.4%	42.7	N/A	N/A	N/A	0.0
Pine Grove Twp	N/A	N/A	N/A	0.0	82.2%	17.2%	0.6%	21.0
Porter Twp	43.1%	56.9%	0.0%	26.7	100.0%	0.0%	0.0%	0.3
South Haven	N/A	N/A	N/A	0.0	24.8%	54.6%	20.6%	20.6
South Haven Twp	N/A	N/A	N/A	0.0	13.2%	56.3%	30.5%	37.8
Waverly Twp	N/A	N/A	N/A	0.0	14.1%	32.7%	53.2%	15.0

Van Buren County Jurisdictions	2011				2012			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	N/A	N/A	N/A	0.0	9.0%	80.6%	10.4%	26.7
Antwerp Twp	53.1%	19.6%	27.3%	39.0	N/A	N/A	N/A	0.0
Arlington Twp	N/A	N/A	N/A	0.0	26.8%	48.3%	24.9%	16.7
Bangor	N/A	N/A	N/A	0.0	47.2%	42.4%	10.4%	3.7
Bangor Twp	N/A	N/A	N/A	0.0	33.0%	54.2%	12.8%	12.7
Bloomingdale	N/A	N/A	N/A	0.0	0.0%	100.0%	0.0%	2.3
Bloomingdale Twp	N/A	N/A	N/A	0.0	10.1%	89.9%	0.0%	13.0
Breedsville	N/A	N/A	N/A	0.0	100.0%	0.0%	0.0%	1.3
Columbia Twp	N/A	N/A	N/A	0.0	51.0%	46.7%	2.3%	18.5
Covert Twp	N/A	N/A	N/A	0.0	7.2%	77.6%	15.2%	37.1
Decatur	55.0%	45.0%	0.0%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	79.8%	20.2%	0.0%	12.3	N/A	N/A	N/A	0.0
Geneva Twp	N/A	N/A	N/A	0.0	14.1%	77.9%	8.1%	18.2
Gobles	N/A	N/A	N/A	0.0	14.0%	59.3%	26.7%	2.2
Hamilton Twp	98.1%	1.9%	0.0%	24.9	N/A	N/A	N/A	0.0
Hartford	82.3%	17.7%	0.0%	2.5	N/A	N/A	N/A	0.0
Hartford Twp	24.7%	72.9%	2.4%	25.4	N/A	N/A	NA	0.0
Keeler Twp	98.3%	1.7%	0.0%	17.5	N/A	N/A	N/A	0.0
Lawrence	46.1%	53.9%	0.0%	2.7	N/A	N/A	N/A	0.0
Lawrence Twp	40.0%	60.0%	0.0%	34.6	N/A	N/A	N/A	0.0
Lawton	69.0%	24.9%	6.0%	3.1	0.0%	0.0%	100.0%	0.3
Mattawan	70.4%	29.3%	0.3%	6.7	N/A	N/A	N/A	0.0
Paw Paw	33.3%	66.7%	0.0%	3.5	N/A	N/A	N/A	0.0
Paw Paw Twp	42.5%	29.9%	27.6%	35.0	N/A	N/A	N/A	0.0
Pine Grove Twp	N/A	N/A	N/A	0.0	41.5%	58.5%	0.0%	18.3
Porter Twp	78.8%	21.2%	0.0%	18.8	N/A	N/A	N/A	0.0
South Haven	N/A	N/A	N/A	0.0	16.5%	55.9%	27.7%	20.0
South Haven Twp	N/A	N/A	N/A	0.0	7.6%	66.1%	26.3%	35.2
Waverly Twp	N/A	N/A	N/A	0.0	0.7%	69.7%	29.7%	15.0

Van Buren County Jurisdictions	2013				2014			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	9.5%	76.6%	13.9%	15.2	49.3%	50.7%	0.0%	26.7
Antwerp Twp	49.9%	23.5%	26.6%	39.2	N/A	N/A	N/A	0.0
Arlington Twp	56.9%	34.2%	8.9%	11.0	37.0%	61.1%	1.9%	16.7
Bangor	N/A	N/A	N/A	0.0	48.4%	45.0%	6.6%	3.7
Bangor Twp	48.4%	35.0%	16.5%	9.9	76.4%	23.6%	0.0%	12.7
Bloomingdale	N/A	N/A	N/A	0.0	36.0%	64.0%	0.0%	2.3
Bloomingdale Twp	7.8%	60.2%	32.0%	12.9	48.8%	51.2%	0.0%	13.0
Breedsville	N/A	N/A	N/A	0.0	100.0%	0.0%	0.0%	1.3
Columbia Twp	54.4%	44.4%	1.2%	18.4	86.6%	13.4%	0.0%	18.5
Covert Twp	4.2%	95.7%	0.1%	16.0	25.9%	55.1%	19.0%	37.1
Decatur	55.0%	45.0%	0.0%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	30.7%	62.8%	6.5%	12.4	N/A	N/A	N/A	0.0
Geneva Twp	31.6%	67.9%	0.5%	14.8	49.1%	50.9%	0.0%	18.2
Gobles	N/A	N/A	N/A	0.0	0.0%	100%	0.0%	2.3
Hamilton Twp	53.8%	46.2%	0.0%	24.6	N/A	N/A	N/A	0.0
Hartford	34.7%	34.7%	30.6%	3.2	N/A	N/A	N/A	0.0
Hartford Twp	23.8%	55.1%	21.1%	25.4	N/A	N/A	N/A	0.0
Keeler Twp	33.0%	67.0%	0.0%	17.5	N/A	N/A	N/A	0.0
Lawrence	38.8%	52.7%	8.5%	2.7	N/A	N/A	N/A	0.0
Lawrence Twp	37.8%	62.2%	0.0%	34.7	N/A	N/A	N/A	0.0
Lawton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0
Mattawan	47.5%	37.1%	15.4%	7.0	N/A	N/A	N/A	0.0
Paw Paw	14.7%	74.9%	10.4%	3.5	N/A	N/A	N/A	0.0
Paw Paw Twp	37.6%	36.3%	26.1%	35.0	N/A	N/A	N/A	0.0
Pine Grove Twp	73.5%	26.5%	0.0%	12.9	56.0%	35.9%	8.1%	18.3
Porter Twp	67.3%	20.5%	12.2%	18.8	N/A	N/A	N/A	0.0
South Haven	31.3%	35.1%	33.6%	14.9	21.1%	58.2%	20.7%	20.3
South Haven Twp	32.4%	54.2%	13.4%	14.7	29.5%	45.6%	24.9%	35.2
Waverly Twp	26.1%	49.8%	24.1%	8.5	32.5%	67.5%	0.0%	15.2

Van Buren County Jurisdictions	Change from 2003 to 2013/2014			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Change in Total Miles Rated
Almena Twp	49.30%	-3.50%	-45.80%	2.10
Antwerp Twp	49.90%	-48.40%	-1.50%	6.70
Arlington Twp	37.00%	22.00%	-59.00%	-4.70
Bangor	44.80%	-33.00%	-11.80%	0.20
Bangor Twp	71.10%	-71.10%	0.00%	-6.00
Bloomingdale	36.00%	-2.80%	-33.20%	0.00
Bloomingdale Twp	48.80%	-31.30%	-17.50%	-6.10
Breedsville	93.80%	-93.80%	0.00%	-0.50
Columbia Twp	86.60%	-56.00%	-30.60%	-3.50
Covert Twp	25.90%	-42.30%	16.40%	-1.60
Decatur	55.00%	-36.20%	-18.80%	0.00
Decatur Twp	30.70%	-18.70%	-12.00%	0.20
Geneva Twp	49.10%	-6.60%	-42.50%	-6.60
Gobles	-11.10%	27.50%	-16.40%	0.10
Hamilton Twp	53.80%	-31.20%	-22.60%	-1.90
Hartford	34.70%	-56.50%	21.80%	0.70
Hartford Twp	23.70%	8.80%	-32.50%	-3.40
Keeler Twp	33.00%	-6.20%	-26.80%	-7.00
Lawrence	-8.50%	0.80%	7.70%	-0.60
Lawrence Twp	37.80%	15.60%	-53.40%	-1.90
Lawton	NA	-92.90%	0.00%	-2.70
Mattawan	47.50%	-6.70%	-40.80%	3.20
Paw Paw	4.30%	-1.80%	-2.60%	0.70
Paw Paw Twp	36.30%	-16.70%	-19.50%	-5.00
Pine Grove Twp	56.00%	-25.80%	-30.20%	-2.70
Porter Twp	67.30%	-68.10%	0.80%	-6.90
South Haven	15.80%	-33.00%	17.20%	0.60
South Haven Twp	24.80%	-38.60%	13.70%	1.10
Waverly Twp	32.50%	44.90%	-77.40%	2.50

* Many jurisdictions had PASER ratings done in both 2013 and 2014, due to Van Buren County Road Commissions efforts to rate all of its roads in the summer of 2013. Since there may be significant overlapping mileage, the report uses the ratings from whichever year (2013 or 2014) the highest number of miles were rated. In circumstances where the number of miles rated in 2014 was within 0.5 miles of the number rated in 2013, the more updated ratings were used in this table.

Red shading indicates deterioration, or an increase in the percentage of poor-condition roads or a decrease in the percentage of good-condition roads, respectively. Green indicates improvement, or respective decreases in poor-condition roads or increases in good-condition roads.